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## READING ACTIVITIES (Answer key)

### 2.3. Answer:

- a. Why did Einstein introduce the “cosmological constant” in his equations?

Einstein introduced his cosmological constant to correct his own equations. These equations demonstrated that the universe is expanding, but this idea was absolutely opposite to the Einstein’s deep convictions about the endless and motionless Universe. The cosmological constant corrected what he considered a mistake, forcing his model to be static. Later it was demonstrated that the real error was the cosmological constant itself.

- b. What is the difference between the model of expanding universe (Big bang) and the model of the steady state universe?

The main difference between them is that according to the Steady State model, the universe has not have a beginning, while according to the Big Bang model, it has have it.

The **Steady State** theory proposed a universe which is eternal and homogeneous in shape and characteristics wherever and whenever we observe it. Its density is constant because new matter is continuously formed.

On the other hand, The **Big Bang** model defends a universe which characteristics and shape are different depending on where and when we observe it. Its density is lower each time because galaxies are separating to each other and new matter is not formed.

- c. What evidences do exist about that the universe is expanding?

The main evidence about the expansion of the universe is the fact that galaxies are separating from each other.

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